

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (presently amended) An *in vitro* method which is a test involving a reaction of one or more biological molecules and which comprises:  
  
labeling a biological molecule with hyperpolarized  $^{129}\text{Xe}$ , wherein ~~said an~~ assay reagent comprises ~~one of said one or more~~ biological molecules:  
  
conducting said reaction; and  
  
observing a magnetic resonance (NMR) spectrum and/or NMR image of the hyperpolarized  $^{129}\text{Xe}$  during the course of said reaction.
2. Cancelled.
3. (previously presented) The method of claim 1, wherein the assay is a competition assay or an immunoassay for following the progress of a reaction selected from the group consisting of receptor-ligand interactions, enzyme-substrate reactions and protein-protein interactions.
4. (previously presented) The method of claim 1, wherein the assay is a hybridization assay or a binding assay for following the progress of a reaction selected from the group consisting of immunoassays for specific analytes, nuclease assays, mutation analysis, mRNA detection and DNA detection.

5. (previously presented) The method of claim 1 wherein the biological molecule is a peptide or a protein.
6. (previously presented) The method of claim 1 wherein the hyperpolarized  $^{129}\text{Xe}$  is enriched at a level of 40% or more.
7. (previously presented) The method of claim 1 wherein the degree of hyperpolarisation is 8% or more.
8. (previously presented) The method of claim 1 which is performed in a solution wherein the solvent has a viscosity in the range of 700 to 1500mPs.
9. (previously presented) The method of claim 1 wherein the pressure of the xenon gas is at least 5 bar.
10. (previously presented) An *in vitro* assay method for following the progress of a reaction of one or more biological molecules and which comprises:  
labeling an assay reagent with hyperpolarized  $^{129}\text{Xe}$  , wherein said assay reagent comprises one of said one or more biological molecules;  
conducting said reaction; and  
observing a change with time of a magnetic response resonance (NMR) spectrum and/or NMR image of the hyperpolarized  $^{129}\text{Xe}$  during the course of said reaction.